

CLAIMS

What is Claimed is:

1. A web page delivery system for dynamically generating a web page comprising cacheable content, said delivery system comprising:

an origin site infrastructure comprising

an application server operative to receive a web page request from a user, to generate a web page template corresponding to a layout of the web page, and to forward the template for creation of the web page, and

a back end monitor operative to insert a key into the template, the key identifying a cacheable content fragment; and

a dynamic proxy cache operative to receive the template from said application server, to create the web page as instructed in the template by inserting the cacheable content fragment identified by the key, and to deliver the web page to the user.

2. A web page delivery system according to Claim 1, wherein said back end monitor is further operative to determine whether the web page comprises the cacheable content fragment, and

wherein said back end monitor inserts the key into the template in response to a determination that the web page comprises the cacheable content fragment.

3. A web page delivery system according to Claim 1, wherein said back end monitor is further operative to determine whether the cacheable content fragment is stored in said dynamic proxy cache, and

wherein said back end monitor inserts the key into the template in response to a determination that the cacheable content fragment is stored in said dynamic proxy cache.

4. A web page delivery system according to Claim 1, wherein said back end monitor is further operative to determine whether the cacheable content fragment is stored in said dynamic proxy cache,

wherein said back end monitor generates the cacheable content fragment and inserts the cacheable content fragment into the template in response to a determination that the cacheable content fragment is not stored in said dynamic proxy cache, and

wherein said dynamic proxy cache stores the cacheable content fragment after receiving the template from said application server.

5. A web page delivery system according to Claim 1, wherein said back end monitor is further operative to maintain a cache directory comprising information that the cacheable content fragment is stored in said dynamic proxy cache.

6. A web page delivery system according to Claim 5, wherein said back end monitor is further operative to update the cache directory if the cacheable content fragment becomes invalid.

7. A web page delivery system according to Claim 6, wherein said back end monitor is further operative to send a message to said dynamic proxy cache to remove the invalid cacheable content fragment.

8. A web page delivery system according to Claim 1, further comprising a plurality of dynamic proxy caches,

wherein said back end monitor is further operative determine whether the cacheable content fragment is stored in a specific one of said plurality of dynamic proxy caches.

9. A web page delivery system according to Claim 8, wherein said back end monitor is further operative to maintain a cache directory comprising information indicating whether the cacheable content fragment is stored in a specific one of said plurality of dynamic proxy caches.

10. A web page delivery system according to Claim 9, wherein the information comprises a bit vector associated with the cacheable content fragment.

11. A method for delivering a web page, comprising the steps of:

- receiving a web page request, the web page request corresponding to a web page comprising cacheable content;
- executing a script in response to the web page request, the script comprising a code block corresponding to a content fragment of the web page;
- producing a template corresponding to a layout of the web page;
- determining whether the content fragment is cacheable;
- inserting a key into the template in response to a determination that the content fragment is cacheable, the key identifying the cacheable content fragment;
- sending the template to a dynamic proxy cache;
- inserting into the web page, by the dynamic proxy cache, the cacheable content fragment identified by the key; and
- transmitting the web page comprising the cacheable content fragment.

12. The method according to Claim 11, wherein said determining step comprises determining whether the code block comprises a tag indicating that the content fragment is cacheable.

13. The method according to Claim 11, wherein the code block comprises a tag indicating cache characteristics of the content fragment, and

wherein said determining step comprises reading the tag to determine the cache characteristics of the content fragment.

14. The method according to Claim 13, further comprising the steps of:
executing the code block to generate the content element in response to a determination that the content fragment is non-cacheable; and
inserting the non-cacheable content element into the template.

15. The method according to Claim 11, further comprising the step of inserting a command into the template in response to a determination that the content fragment is cacheable, the command instructing the dynamic proxy cache to retrieve the cacheable content fragment.

16. The method according to Claim 11, further comprising the steps of:
determining whether the cacheable content fragment is stored in the dynamic proxy cache; and

retrieving the key from a cache directory in response to a determination that the cacheable content fragment is stored in the dynamic proxy cache.

17. The method according to Claim 16, further comprising the step of updating the cache directory by releasing the key identifying the cacheable content fragment when the cacheable content fragment becomes invalid.

18. The method according to Claim 17, further comprising the step of sending a message to the dynamic proxy cache to remove the invalid content fragment.

19. The method according to Claim 16, wherein said step of determining whether the cacheable content fragment is stored in the dynamic proxy cache comprises reading a bit vector associated with the key, the bit vector comprising a bit corresponding to the dynamic proxy cache.

20. The method according to Claim 19, further comprising the step of updating the cache directory by releasing the key identifying the cacheable content fragment when the cacheable content fragment becomes invalid.

21. The method according to Claim 20, wherein said updating step comprises clearing the bit of the bit vector.

22. The method according to Claim 16, further comprising the step of storing the cacheable content fragment in architecture of a web site.

23. The method according to Claim 11, further comprising the steps of:
determining whether the cacheable content fragment is stored in the dynamic proxy cache;

executing the code block to generate the cacheable content fragment in response to a determination that the cacheable content fragment is not stored in the dynamic proxy cache;

inserting the cacheable content fragment into the template; and

storing the cacheable content fragment in the dynamic proxy cache after said sending step.

24. The method according to Claim 23, further comprising the step of inserting a command into the template, the command instructing the dynamic proxy cache to perform said storing step.

25. The method according to Claim 23, further comprising the step of storing the key in a cache directory.

26. The method according to Claim 25, further comprising the step of updating the cache directory by releasing the key identifying the cacheable content fragment when the cacheable content fragment becomes invalid.

27. The method according to Claim 26, further comprising the step of sending a message to the dynamic proxy cache to remove the invalid cacheable content fragment.

28. A computer-readable medium having computer-executable instructions for performing the method of Claim 11.

29. A method for delivering a web page, comprising the steps of:

receiving a web page request;

executing a script in response to the web page request, the script comprising a code block corresponding to a content fragment of the web page;

producing a template at run-time corresponding to a layout of the web page;

assembling the web page according to the template by inserting the content fragment; and

transmitting the web page comprising the content fragment.

30. The method according to Claim 29, further comprising the steps of:
determining whether the content fragment is cacheable; and
inserting a key into the template in response to a determination that the content fragment is cacheable, the key identifying the content fragment,
wherein said assembling step comprises inserting into the web page the content fragment identified by the key.

31. The method according to Claim 30, further comprising the step of sending the template to a dynamic proxy cache,
wherein the dynamic proxy cache performs said assembling step.

32. The method according to Claim 29, further comprising the step of sending the template to a dynamic proxy cache,
wherein the dynamic proxy cache performs said assembling step.

33. The method according to Claim 32, further comprising the steps of:
determining whether the content fragment is cacheable; and
inserting a key into the template in response to a determination that the content fragment is cacheable, the key identifying the content fragment,
wherein said assembling step comprises inserting into the web page the content fragment identified by the key.

34. A computer-readable medium having computer-executable instructions for performing the method of Claim 29.

35. A method for assigning a key to a cacheable content fragment, the content fragment having a fragment ID, said method comprising the steps of:

determining whether the fragment ID corresponding to the cacheable content fragment exists in a cache directory maintained at a web site, the cache directory comprising information indicating whether the content fragment is stored in a dynamic proxy cache;

assigning a key to the content element in response to a determination that the fragment ID does not exist in the cache directory; and

inserting the key into the cache directory.

36. The method according to Claim 35, wherein, in said assigning step, the key is assigned by taking the next available key from a list of keys.

37. The method according to Claim 36, further comprising the step of updating the cache directory when the content fragment becomes invalid by releasing the key assigned to the content fragment and inserting the key back into the list of keys.

38. The method according to Claim 36, wherein the key comprises an integer, and

wherein the list of keys comprises a free list of unused integers.

39. The method according to Claim 35, wherein the cache directory comprises information indicating whether the content fragment is stored in one of a plurality of dynamic proxy caches.

40. The method according to Claim 39, wherein the information comprises a bit vector having a plurality of bits, each bit corresponding to a respective one of the plurality of dynamic proxy caches.

41. The method according to Claim 40, further comprising the step of updating the cache directory when the content fragment becomes invalid by releasing the key assigned to the content fragment.

42. The method according to Claim 41, wherein the key is released in said updating step by clearing each bit of the bit vector.

43. A computer-readable medium having computer-executable instructions for performing the method of Claim 35.